**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Dirk John et al.

Application No.: 10/581,208

Filed: May 23, 2007

For: METHOD FOR THE SUPPLYING AND INSTALLATION OF DEVICE-SPECIFIC FUNCTIONALITIES AND/OR DATA FOR THE FIELD DEVICES OF A DISTRIBUTED SYSTEM

**MAIL STOP**
**APPEAL BRIEF - PATENTS**

Group Art Unit: 2121

Examiner: Douglas S. Lee

Appeal No.: _____

## APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated July 21, 2010 finally rejecting claims 1-36, which are reproduced as the Claims Appendix of this brief.

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

## Table of Contents

I. Real Party in Interest

ABB Research Ltd. is the real party in interest, and is the assignee of Application No. 10/581,208.

II. Related Appeals and Interferences

The Appellant's legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

A. There are 29 total claims currently pending in the application.

B. Current status of the claims

1. Claims canceled: 1-3, 8, 17-19
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 4-7, 9-16, and 20-36
4. Claims allowed: None
5. Claims rejected: 4-7, 9-16, and 20-36
6. Claims on appeal: 4-7, 9-16, and 20-36

IV. Status of Amendments

No Amendments were filed subsequent to the final Office Action dated July 21, 2010.

V. Summary Claimed Subject Matter

A controller acquires and installs data specific to each device and the functional units that interact with the devices (pg. 12, lines 18-26). As a result of the install, the controller includes means for interacting with each field device in the arrangement (pg. 12, line 34 through pg. 13, line 14). In other words, the controller

can perform an automatic install of device data, the installed device data then being executed so that the controller can interact with each device in an arrangement of field devices (pg. 12, lines 18-26).

| Claim | Feature | Cite |
|---|---|---|
| 34 | A system for controlling a distributed system comprising:<br>an arrangement of plural field devices, wherein each field device is associated with a device-specific component and at least one functional unit; | pg. 10, lines 24 - pg. 11, line 11<br>Fig. 2 |
| | memory that stores device-specific data of each device-specific component and the at least one functional unit; and | Fig. 2, element 60<br>pg. 10, lines 1-11 |
| | a controller that communicates with the memory to acquire and install the device specific data, wherein the controller includes means for interacting with each field device based on the installed device specific data. | Fig. 3, element 90, pg. 12, line 7 - page 13, line 5 |
| 35 | A method for configuring a distributed system, wherein the distributed system includes memory, an arrangement of field devices, and a controller, the method comprising:<br><br>storing device-specific data in the memory; | Fig. 1, pg. 12, lines 7-16 |
| | installing the device-specific data in the controller; and | Pg. 12, lines 18-26 |

| Claim | Feature | Cite |
|---|---|---|
| 35 | producing, at the controller, device-specific components for the arrangement of field devices based on the installed device specific data. | Pg. 12, line 34-pg. 13, line 5 |

VI. Grounds of Rejection to be Reviewed on Appeal

Whether claims 4-7, 9-16, and 20-36 are anticipated by *Glanzer et al* (U.S. Patent No. 6,424,872) under 35 U.S.C. §102(b) as alleged by the Examiner.

VII. Argument

**Independent claims 34 and 35 are distinguishable over *Glanzer***

As it pertains to Appellant's claimed embodiments, during an install, the controller acquires data specific to each device and respective functional units used to interact with the devices. Each functional unit stores device-specific information, such as device core data, device parameters, and device drivers. The device specific components and functional units are initially stored in a memory device on the distributed network. The installation occurs automatically and in a single communication event over the network. Once the data and functional units are installed, the controller can then interact (i.e., communication and/or control) with each respective field device in the arrangement.

*Glanzer* does not disclose or suggest a system that encompasses at least the foregoing features. Rather, *Glanzer* discloses a block control system that includes plural field devices. Each field device having a physical layer, communication stack, and user layer, with the field devices being connected by a bus. The communications stack is described as facilitating data exchanges and message exchanges. Fig. 3 illustrates various components of a field device that control data exchanges for that device.

*Glanzer* discusses the use of a data link layer that controls the transmission of messages onto the bus from a link active scheduler, link master device, or basic device based on the instructions of a network controller or the link active scheduler.

Glanzer, col. 5, lines 58-63. The link active scheduler controls the data link layer according to a network schedule stored in memory. The network schedule is defined as a list of transit times for data buffers within the system. *See* Id., col. 5, lines 64-67. The link active scheduler maintains a live list, which identifies all field devices operating on the system. When a field device is added or removed from the system the link active scheduler updates and broadcasts the live list to all field devices. The link active scheduler schedules the communications from other field devices operating in the system and coordinates the timing of each communication by issuing compel data messages at scheduled times.

In the rejection, the Examiner alleges that Appellant's claimed controller reads on the link active scheduler of *Glanzer*. Regarding Appellants' claims, the controller installs device-specific data, so that when the installed data is executed, the controller can interact with each field device. As noted above, the link active scheduler of *Glanzer* maintains a live list, and schedules communications from field devices. The live list merely identifies those devices which are active and can communicate on the communication bus. *Glanzer*, however, does not disclose or suggest the install of device specific data and producing device-specific components based on the installed device-specific data.

More specifically, *Glanzer* does not teach or otherwise contemplate that each field device is associated with a device-specific component and the device-specific data is correlated to the device-specific component. Rather, *Glanzer* discloses that the link active scheduler schedules communication of the field devices by issuing compel messages at specified times. There are no device-specific components that are produced and used to communicate with a field device. One of ordinary skill would not have interpreted the "compel message" of *Glanzer* as a device-specific component of the link active scheduler. Because the schedule is neither installed nor executed to produce device-specific components for interacting with the field devices, Appellant submits that the link active scheduler is not analogous to Appellants' claimed controller as alleged. *Glanzer,* therefore, does not anticipate independent claims 34 and 35.

**Claims 4 and 40 are not anticipated by *Glanzer***

Claims 4 and 20 depend from claims 34 and 35, respectively, and recite that at least one of the device-specific functionalities and information that is stored in the functional units is installed by means of an automatically running installation process.

The Examiner alleges that this claim feature is disclosed by *Glanzer* at column 5, line 47 through column 6, line 67. *See* Office Action, pg. 3. This citation of *Glanzer* describes the functions of the link active scheduler. As noted above, nothing in *Glanzer* discloses or suggests that the link active scheduler, or any feature thereof, installs device-specific functionalities or device-specific data as does Appellant's claimed controller. For these reasons, claims 4 and 20 are distinguishable over *Glanzer* such that withdrawal of this rejection is warranted.

**Claims 9 and 25 are not anticipated by *Glanzer***

Claims 9 and 25 depend from claims 34 and 35, respectively, and recite at least one of the device-specific components, at least one configuration tool, and at least one network component is installed selectively. The Examiner alleges that this feature is disclosed in *Glanzer*. However, as Appellant notes above, the link active scheduler described by *Glanzer* does not have any installation capabilities as recited in the claims. While *Glanzer* does disclose the execution of programs and algorithms by a processor, these features are associated with a device, such as the field device 105 or 110. *See* Glanzer, col. 6, lines 54-67. Thus, claims 9 and 29 are not anticipated by *Glanzer* and withdrawal of the rejection of these claims is deemed appropriate.

**Claim 33 is not anticipated by *Glanzer***

Claim 33 depends from claim 35 and recites installing, in the controller, the device-specific data based on an interaction between the at least one device specific component, at least two functional units, and the network component, and checking, at the controller, the device-specific functionalities and information for the device-specific components for completeness.

As established through Appellant's above remarks, *Glanzer* does not disclose or suggest that the link active scheduler, which the Examiner alleges is analogous to Appellant's claimed controller, is capable of installing device specific data and

checking device-specific functionalities as recited in claim 33. Nor does *Glanzer* describe any other device or component that can be reasonably interpreted to perform these functions. Accordingly, withdrawal of the rejection to claim 33 is respectfully requested.

## VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

## IX. Evidence Appendix

No evidentiary exhibits are provided with this Appeal.

## X. Related Proceedings Appendix

No related proceedings are associated with this Appeal.

XI. Conclusion

Appellant has pointed to errors in the rejection of the claims. Appellant respectfully requests that the final rejection be reversed and the application be returned to the Examiner for prompt allowance.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date January 4, 2011

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## VIII. CLAIMS APPENDIX

**The Appealed Claims**

4. The system as claimed in claim 34, wherein at least one of the device-specific functionalities and information that is stored in the functional units is installed by means of an automatically running installation process.

5. The system as claimed in claim 34, further comprising:

wherein configuration tools are provided to install the means for installing a communication link between at least one of the field devices and with the higher-level control system or controller.

6. The system as claimed in claim 34, further comprising:

wherein network components are provided for installation of the network links for a specific communication architecture.

7. The system as claimed in claim 34, wherein the functional units are at least one of device documentation, device core data, device parameters, device drivers, control functions, setting-up functions, diagnosis functions, maintenance functions, optimization functions, alarm processing functions, and life functions.

9. The system as claimed in claim 7, wherein at least one of the device-specific components, at least one configuration tools tool, and at least one network components component can be are installed selectively.

10. The system as claimed in claim 34, wherein at least one of drives, motor protection units, switchgear assemblies, sensors, in particular sensors for pressure, temperature and flow rate measurements, low voltage devices, actuators, and analysis devices are used as field devices.

11. The system as claimed in claim 34, wherein at least one of the device-specific functionalities and information is recorded as at least one of data structures and program components in the device-specific components memory.

12. The system as claimed in claim 34, wherein the memory is configured to test each device-specific components are tested for at least one of correctness and completeness of at least one of the device-specific functionalities and information.

13. The system as claimed in claim 34, wherein the device-specific components can be extended in a modular form.

14. The system as claimed in claim 34, wherein the distributed system is a distributed automation system.

15. The system as claimed in claim 34, wherein the higher-level system is a process control system or a programmable logic controller.

16. The system as claimed in claim 34, wherein the field devices communicate with the higher-level control system or controller via a fieldbus protocol which is in the form of at least one of PROFIBUS, PROFINet, FOUNDATION fieldbus, and HART.

20. The method as claimed in claim 35, wherein the device-specific data includes at least one of device-specific functionalities and information each device-specific component and associated which is stored in the functional units is installed by means of an automatically running installation process.

21. The method as claimed in claim 35, further comprising:

wherein configuration tools are used for the installation of the installing a communication link between at least one of the field devices and with the higher-level control system or controller.

22. The method as claimed in claim 35, further comprising:

wherein network components are provided for installation of the installing network links for a specific communication architecture.

23. The method as claimed in claim 35, wherein the functional units provide at least one of device documentation, device core data, device parameters, device drivers, control functions, setting-up functions, diagnosis functions, maintenance functions, optimization functions, alarm processing functions, and life functions.

24. The method as claimed in claim 35, wherein at least one of the device-specific components, the at least one configuration tools tool, and the at least one network components component are installed in an installation process.

25. The method as claimed in claim 35, wherein at least one of the device-specific components, the at least one configuration tools tool, and the at least one network components component are installed selectively.

26. The method as claimed in claim 35, wherein at least one of drives, motor protection units, switchgear assemblies, sensors, in particular sensors for pressure, temperature and flow rate measurements, low voltage devices, actuators and analysis devices are used as field devices.

27. The method as claimed in claim 35, wherein the device specific data includes at least one of device-specific functionalities and information, the method further comprising:

is recorded storing the at least one of device-specific functionalities and information as at least one of data structures and program components in the device-specific components.

28. The method as claimed in claim 35, further comprising:

wherein testing the device-specific data for at least one of correctness and completeness of at least one of the device-specific functionalities and information are tested.

29. The method as claimed in claim 35, further comprising:

wherein providing modular extensions are provided in the device-specific components.

30. The method as claimed in claim 35, wherein the distributed system is in the form of a distributed automation system.

31. The method as claimed in claim 35, wherein the higher-level system is in the form of a process control system or a programmable logic controller.

32. The method as claimed in claim 35, wherein the field devices communicate with a higher-level control system or controller via a fieldbus protocol which is in the form of at least one of PROFIBUS, PROFINet, FOUNDATION fieldbus, and HART.

33. The method as claimed in claim 35, wherein the distributed system also includes a network component and a controller plural functional units, the method further comprising:

installing, in the controller, the device-specific functionalities and information for the device-specific components data based on an interaction between the at least one device specific component, at least two functional units, and the network component; and

checking, at the controller, the device-specific functionalities and information for the device-specific components for completeness.

34. A system for controlling a distributed system comprising:

an arrangement of plural field devices, wherein each field device is associated with a device-specific component and at least one functional unit;

memory that stores device-specific data of each device-specific component and the at least one functional unit; and

a controller that communicates with the memory to acquire and install the device specific data, wherein the controller includes means for interacting with each field device based on the installed device specific data.

35. A method for configuring a distributed system, wherein the distributed system includes memory, an arrangement of field devices, and a controller, the method comprising:

storing device-specific data in the memory;

installing the device-specific data in the controller; and

producing, at the controller, device-specific components for the arrangement of field devices based on the installed device specific data.

36. The method of claim 35, wherein the step of installing the device-specific data is performed once, the method further comprising:

generating, in the controller, means for interacting with each field device in the arrangement based on the installed device-specific data.

## IX. EVIDENCE APPENDIX

No evidentiary exhibits are provided with this Appeal.

## X. RELATED PROCEEDINGS APPENDIX

No related proceedings are associated with this Appeal.